

# Level 2 Diversification: The Missing Level

Brian Schroeder

Investment Change Evaluations, LLC

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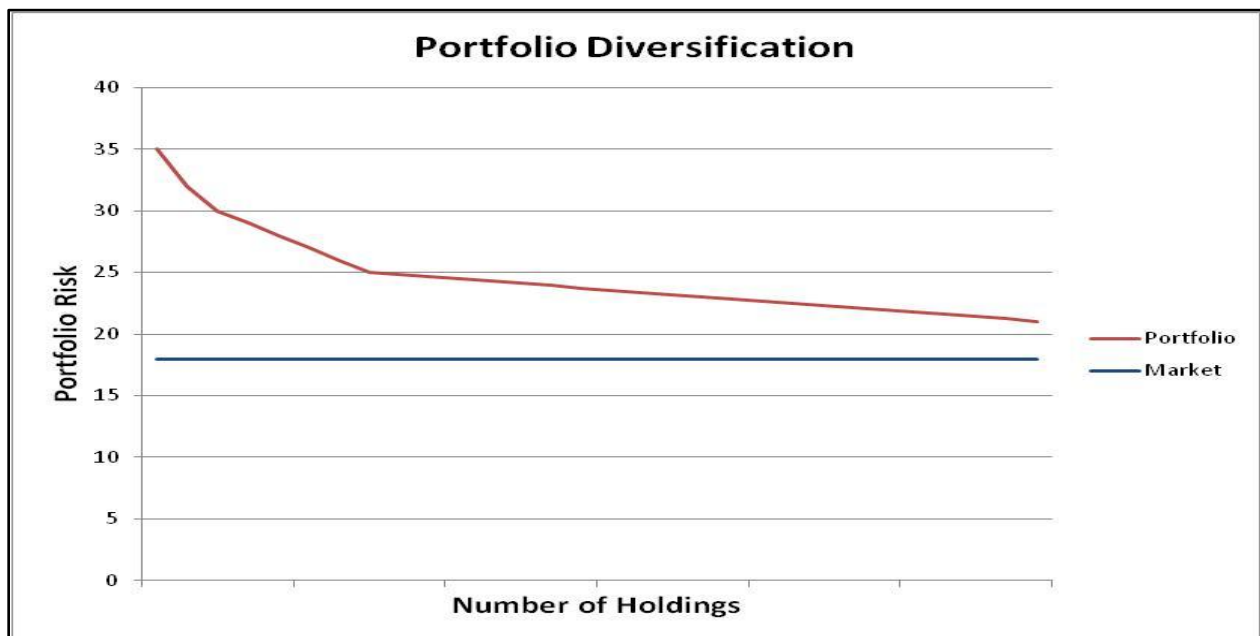
One of the most fundamental concepts in investment theory is diversification. It has achieved mantra status similar to real estate's "location, location, location" such that it is rarely questioned and everything has already been said. However, like in so many other technical fields, there is usually more to investigate. This essay explores old and new concepts to help institutional investors not only better understand diversification, but also show where the most crucial need for it may be entirely missing.

For institutional investors, diversification is commonly used in describing a portfolio. "Is our stock or bond portfolio diversified?" Not only is a diversified portfolio within a single asset class desired, but so is diversification by asset class. "Is our asset allocation diversified?" Finally, if using active management, diversifying active manager risk is sought. "Have we diversified our active manager risk?"

These are critical questions to ask and absolutely essential when managing large, diversified investment plans. Although these questions are essential, they are not sufficient. There is an even more critical level of diversification that investment plans have largely ignored. And this lack of diversification can be costly, with institutional investors not even knowing that this void exists.

Let us first review the concept of diversification by answering the three questions above. Answering them will lay the foundation for explaining the missing level of diversification.

For investment portfolios, diversification reduces the unique or un-systematic risks associated with any single investment. Looking at a stock portfolio, if it only held shares of ABC Corp., the portfolio characteristics would be that of ABC Corp.'s stock. By adding stocks to the portfolio that have different risk/return characteristics and correlations, the portfolio's risk and return characteristics change.



Ultimately, diversifying a portfolio means eliminating the unique risks of any single stock until it approaches the systematic risk (and return) of the stock market, or a particular sub-set of the stock market. This diversifying principle applies to most asset classes.

The next question is, “Is our asset allocation diversified?” Similar to adding stocks to a portfolio, adding asset classes that have different risk/return characteristics and different correlations will create a portfolio with its own unique characteristics. However, unlike portfolio diversification, there is no asset allocation benchmark to diversify towards. Instead, asset allocation pertains to achieving a certain rate of return. This is a much different question because the diversification goals are entirely different.

One could argue that applying the term diversification to asset allocation is incorrect as there is no objective measure of asset class diversification. And diversification for the sake of being “diversified” is not the goal. Rather, the goal of asset class diversification is about achieving a certain level of return while minimizing risk. Or conversely, it is about achieving a certain level of risk while maximizing return.

For institutional plan sponsors, the asset allocation goal centers around a perpetual return assumption. For foundations and endowments, it might be the annual distribution goal plus 1%. For pension plans, it may be the actuarial assumed rate, net of fees. For a defined contribution plan’s default option or “Q.D.I.A.,” it might be the Consumer Price Index (CPI) plus 2%.

Once the return goal is identified, the asset allocation question becomes, “What mix of asset classes should achieve our return goal net of fees with an acceptable level of risk?” Let us explore how asset class diversification is normally approached using a mean-variance analysis.

A mean-variance analysis combines different asset classes that are each defined by the: 1) expected mean returns, 2) variance of the expected returns, and 3) correlation of returns between asset classes. Expected returns are *predictions*, while the variance and correlations are usually *historical measures*, but of course can be changed to be made predictive. The old saying “garbage in, garbage out” has never been more relevant as the output of a mean-variance analysis is mechanical such that the quality and accuracy of the inputs are where the study’s real value is determined. And almost as important, the *timing* of when such an analysis is performed can also be crucial for making a successful change. This timing issue will be discussed in greater detail later when the missing level of diversification is revealed.

Let’s imagine an institutional investor, that uses separate account active managers, performs a mean-variance analysis during the first quarter of 2013 using the following assumptions:

	<u>Expected Mean Return</u>	<u>Standard Deviation</u>	<u>Fee (bps)</u>
<b>Standard &amp; Poor's 500</b>	8.00	19.00	30
<b>Barclays Aggregate Bond</b>	4.30	8.00	25
<b>Barclays High Yield Bonds</b>	6.50	15.00	50
<b>MSCI-EAFE (Int'l Stocks)</b>	8.50	20.00	90
<b>Russell 2000 (Small Cap)</b>	9.00	22.00	80
<b>NCREIF-NPI (Real Estate)</b>	8.00	17.00	110
<b>S&amp;P GSCI (Commodities)</b>	8.00	18.00	90

Unlike most mean-variance studies, our analysis will also include fees for active management making the results much more meaningful for investors.

The correlations between these asset classes for our mean-variance analysis will be as follows:

	<i>S&amp;P500</i>	<i>BAG</i>	<i>HY</i>	<i>EAFE</i>	<i>R2000</i>	<i>NCREIF</i>	<i>S&amp;P GSCI</i>
S&P500	1						
BAG	-0.2950	1					
BAG-HY	0.8156	-0.1806	1				
EAFE	0.9282	-0.1023	0.8352	1			
R2000	0.9647	-0.3772	0.7807	0.8654	1		
NCREIF	0.2342	-0.1457	-0.0738	0.1242	0.2066	1	
S&P GSCI	0.6466	-0.3902	0.6478	0.6483	0.6039	0.4101	1

By combining various weightings of the above asset classes, we can make predictions about future portfolio returns. Consider the following asset allocations and Portfolios A-E:

	<u>100% Bonds</u>	<u>100% Stocks</u>	<u>"60/40%"</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>
<b>Standard &amp; Poor's 500</b>		100%	60%	50%	50%	40%	35%	30%
<b>Barclays Aggregate Bond</b>	100%		40%	40%	30%	30%	25%	25%
<b>Barclays High Yield Bonds</b>				10%	10%	10%	10%	10%
<b>MSCI-EAFE (Int'l Stocks)</b>					10%	10%	10%	10%
<b>Russell 2000 (Small Cap)</b>						10%	10%	10%
<b>NCREIF-NPI (Real Estate)</b>							10%	10%
<b>S&amp;P GSCI (Commodities)</b>								5%
<b>Fee (bps)</b>	<b>25.00</b>	<b>30.00</b>	<b>28.00</b>	<b>34.00</b>	<b>36.50</b>	<b>41.50</b>	<b>49.75</b>	<b>52.75</b>
<b>Net Return (%)</b>	<b>4.05</b>	<b>7.70</b>	<b>6.24</b>	<b>6.23</b>	<b>6.43</b>	<b>6.48</b>	<b>6.58</b>	<b>6.55</b>
<b>Risk (Std. Dev %)</b>	<b>8.00</b>	<b>19.00</b>	<b>10.89</b>	<b>10.88</b>	<b>12.25</b>	<b>12.43</b>	<b>11.93</b>	<b>11.62</b>
<b>Return/Risk</b>	<b>0.51</b>	<b>0.41</b>	<b>0.57</b>	<b>0.57</b>	<b>0.52</b>	<b>0.52</b>	<b>0.55</b>	<b>0.56</b>

As was noted above, the quality of the output of this mean-variance analysis is primarily determined by the accuracy of the inputs, which are all predictions of the future. This is the situation we are faced with and is why it is important to understand how the inputs are determined and by whom.

Although this is not the point of this essay, there is a plethora of short-comings of such a study and acting on its results. These include:

- 1) The inputs usually play the "dead hand" of history,
- 2) Most studies do not account for fee increases or trading costs,
- 3) The timing of the study and its implementation may chase "hot asset classes,"
- 4) If using active management, it invites chasing "hot managers,"
- 5) If you believe in efficient markets/pricing, it normally just adds risk (and hopefully) return while increasing the total fees paid.

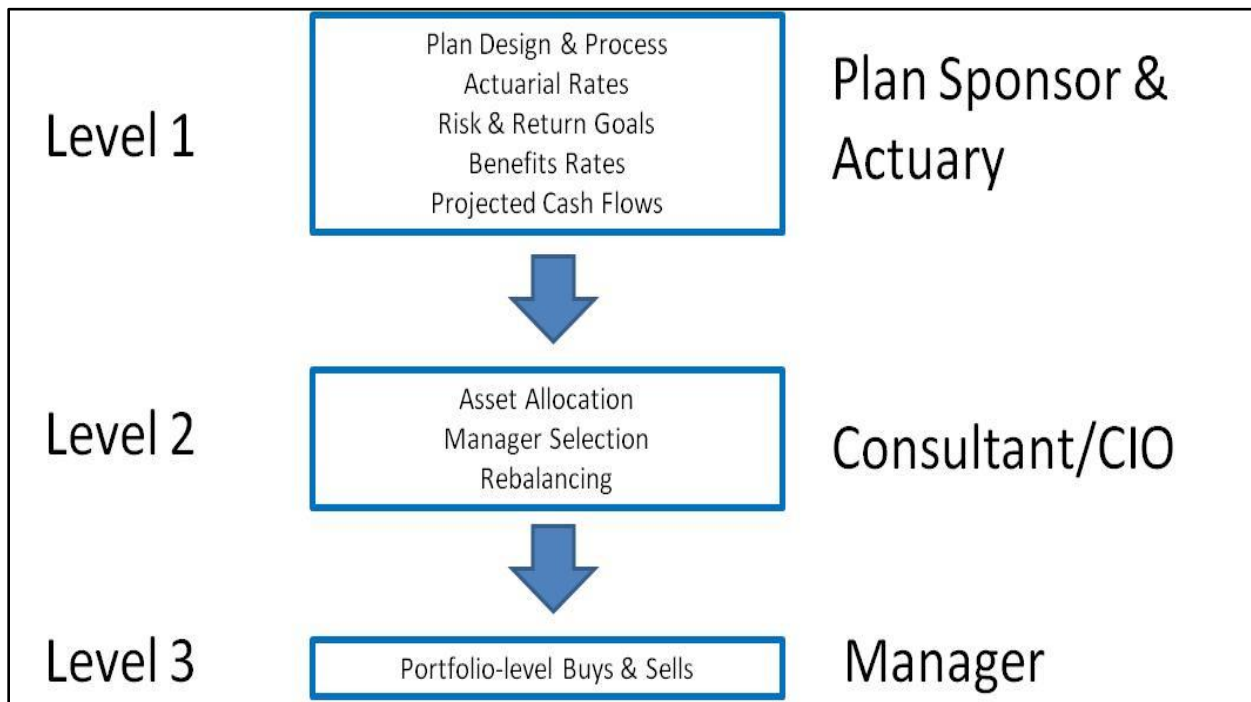
Finally, to complete a mean-variance analysis, one could supplement the above findings with a Monte Carlo analysis to show potential future outcomes of the various portfolios over time. But that is beyond the scope of this essay as we are only explaining the concept of diversification.

The third question involves diversification of active manager risk. “Have we diversified our active manager risk?” In other words, we need to diversify against negative alpha (underperformance versus the benchmark.) To illustrate the answer to this question, consider the following table showing the annual alpha net of fees for 10 managers (A – J) each managing 10% of the total portfolio over 10 years:

Year / Mgr	A	B	C	D	E	F	G	H	I	J	Plan
1	4.0	4.0	2.0	2.0	-2.0	-5.0	0.0	4.0	-6.0	2.0	0.50
2	2.0	3.0	-7.0	1.0	-1.0	-3.0	1.0	3.0	-8.0	4.0	-0.50
3	4.0	3.0	-9.0	-6.0	-1.0	-8.0	3.0	-5.0	-5.0	6.0	-1.80
4	5.0	0.0	14.0	-3.0	4.0	8.0	-2.0	-8.0	12.0	8.0	3.80
5	-3.0	-2.0	12.0	-5.0	6.0	6.0	-4.0	0.0	8.0	-8.0	1.00
6	-5.0	-8.0	0.0	7.0	-3.0	5.0	4.0	2.0	7.0	-6.0	0.30
7	1.0	2.0	-2.0	4.0	-2.0	12.0	2.0	-5.0	4.0	-4.0	1.20
8	2.0	-1.0	-8.0	2.0	4.0	4.0	3.0	-2.0	0.0	-2.0	0.20
9	-3.0	-3.0	2.0	-6.0	3.0	-6.0	-3.0	4.0	-3.0	4.0	-1.10
<u>10</u>	<u>-2.0</u>	<u>-2.0</u>	<u>1.0</u>	<u>-4.0</u>	<u>-1.0</u>	<u>-2.0</u>	<u>-2.0</u>	<u>3.0</u>	<u>-5.0</u>	<u>6.0</u>	<u>-0.80</u>
Avg Alpha	0.5	-0.4	0.5	-0.8	0.7	1.1	0.2	-0.4	0.4	1.0	0.28
Std Dev	3.5	3.6	7.8	4.6	3.2	6.8	2.8	4.4	6.9	5.6	1.56

Diversification of active manager risk can be seen by comparing the annual manager alpha and Plan alpha and the 10-year average annual alpha and standard deviation. The Plan’s average alpha and standard deviation of alpha has been minimized through active manager diversification.

Now that we have reviewed the basics of portfolio diversification, asset allocation diversification, and active manager diversification, let us now turn to the decision structure of an institutional investment plan. It can be described with the following flow chart:



Level 1 decisions concern plan design and are normally a function of the long-term goals of the plan sponsor and beneficiaries. These are long-term in nature and not subject to frequent change.

Level 2 decisions flow from the Level 1 plan design and assumptions. Crafting an asset allocation strategy and choosing the managers (active and/or passive) are the primary Level 2 decisions. Rebalancing the portfolio in response to changes in the markets is also an important Level 2 decision.

Level 3 decisions are the portfolio-level decisions made by the investment managers. These Level 3 decisions are measured by a manager's performance versus the appropriate benchmark.

The most important decisions to achieve the Level 1 goals are made in Level 2. Normally they are made by a Chief Investment Officer or an Investment Consultant. As it was shown in my last paper, *Who "Owns" Your Institutional Investment Portfolio Returns?*, **Level 2 decisions are far more impactful on total performance than Level 3 decisions.** Yet, because Level 2 decisions are difficult for a plan sponsor to monitor, diversifying Level 2 decision making is a prudent step for every plan sponsor.

Lack of Level 2 diversification combined with a lack of Level 2 reporting can be a potent and disastrous mixture for plan sponsors. The Chief Investment Officer or Investment Consultant may be very poor at asset allocation decisions and timing, manager selection and timing, and rebalancing. Yet the plan sponsor, relying on reports provided by that same Level 2 decision maker, will find it difficult to evaluate Level 2 success. Level 2 diversification protects against this serious problem.

Let us explore several ways to add Level 2 diversification to an investment portfolio. These are simple, practical, cost-effective and fall into one of two categories. The two categories are:

1. Unbundling
2. Multiple Balanced Managers

Unbundling simply means diversifying Level 2 responsibilities by separation. Separating Level 2 duties not only diversifies decision making, but also removes soft conflicts of interest. Let's examine a few of these unbundling possibilities and briefly explain the benefits of doing so.

The first unbundling example concerns performance reporting. Accurate, reliable, and insightful performance reporting is necessary for investment success. Unbundling performance reporting would eliminate the obvious conflict of interest faced by a Chief Investment Officer or Investment Consultant that reports on their own Level 2 decisions. Unbundling reporting can easily be accomplished and would ensure monitoring is free of conflicts of interest. Further, *interpreting* the performance would now be diversified as a plan sponsor would hear more than one voice at the table.

Unbundling the Level 2 asset allocation decision could also be easily accomplished. Instead of singularly relying on a Chief Investment Officer or Investment Consultant, a plan sponsor could purchase additional studies and compare and contrast the various studies. Further, a plan sponsor could seek asset allocation studies from their investment managers. Managers may even provide these at no cost. A plan sponsor could now review multiple recommendations. This increases prudence as it improves diversification of thought and strategy.

Diversifying the Level 2 asset allocation decision could also be accomplished with an asset allocation committee comprised of the investment managers, thus excluding the Chief Investment Officer or

Investment Consultant entirely. This could lower costs by stripping those duties from the Chief Investment Officer or Investment Consultant and simply adding to the investment managers' responsibilities. Although there may be conflicts as managers may promote their own asset class, the fact that each would face the same conflict would eliminate the conflict on the whole. The Chief Investment Officer or Investment Consultant could serve as the committee's moderator.

Timing is one of the greatest risks associated with asset allocation changes. As mentioned above, the mechanics and inputs of a mean-variance analysis are often routine and similar. Therefore the timing of a change in asset allocation takes on greater importance. In other words, there is the danger of loss as the timing can simply be chasing a hot asset class as it is about to cool. Simply compare the recommendations from asset allocation studies through the years. Investment fashions come and go, and acting on them essentially becomes chasing returns or veiled market timing, despite asset allocation being a long-term decision.

Anecdotally, look back over these last 15 years and observe what asset classes had inflows and when. Tech stocks had tremendous inflows in 1999 and 2000 before the bubble popped. Absolute return hedge fund strategies gathered assets primarily after their superb performance during the 2000-2002 bear market. Real Estate had massive inflows in 2007 and 2008 before the crash. International strategies became more popular after great returns in the mid-to-late 2000's and have since cooled. Diversifying the Level 2 asset allocation decision can protect plans from making poorly timed changes.

Manager selection and monitoring is the next Level 2 decision that can be easily diversified. There is an obvious conflict of interest a single Chief Investment Officer or Investment Consultant faces. Imagine the situation when an Investment Consultant hires an investment manager that fares poorly over the next three years post-hire such that it is an obvious and costly mistake. What should an Investment Consultant do? If the Investment Consultant "doubles down" and affirms holding onto the poorly performing manager, and the investment manager continues to do poorly, than it shows another bad decision by the Investment Consultant. It is much easier for the Investment Consultant to "punt" the investment manager and sweep that past poor performance under the rug. Unbiased analysis of when to fire a manager is missing in this situation.

One could argue that the firing decision is far more important than the hiring decision as it is predicting an existing manager will continue to under-perform and sets in motion the search for a replacement. Further, there is a large cost in terms of time and trading expense when changing managers, and therefore the decision to fire should not be taken lightly and be as objective as possible. How often has an investment manager come roaring back after being fired? It happens way too often and how many times might the firing have been affected by this conflict of interest?

Separating the Level 2 decision of manager selection can remove this conflict. If the plan sponsor has diversified its performance reporting and monitoring as suggested above, this performance monitor could also be tasked with manager monitoring. Or, the plan sponsor could form a committee to determine the firing decision. Ultimately, the goal is to remove it from the person that made the initial hire recommendation.

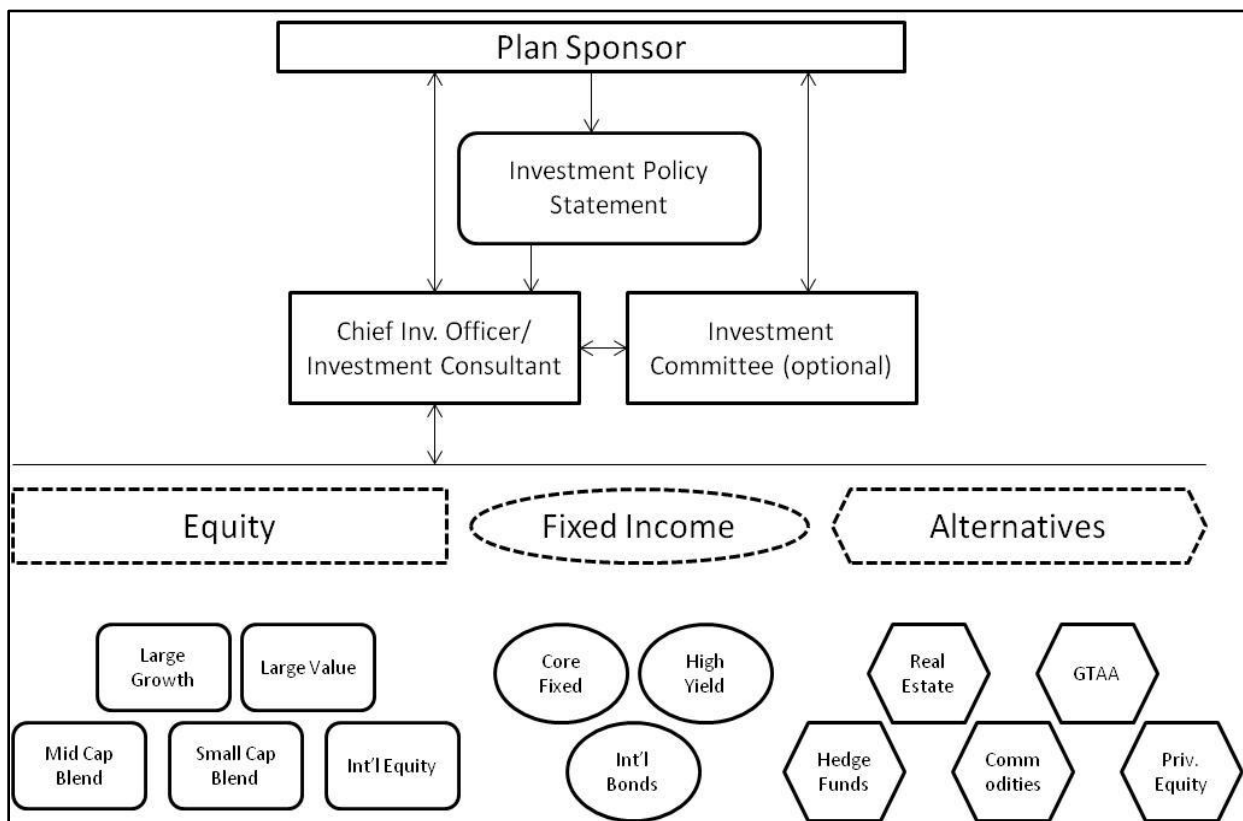
The last Level 2 decision that can easily be unbundled concerns portfolio rebalancing. Although this is often an after-thought, effective rebalancing can enhance portfolio returns and reduce risk. Unfortunately, it seems, few resources and attention are devoted to this facet of investment management. Many plans do not even have a rebalancing policy or objective "triggers" in place. Hiring

an investment manager whose sole duty is to rebalance a portfolio can be an inexpensive way to add Level 2 diversification to the investment strategy and thus improve returns while reducing risk.

The above suggestions are simple and effective ways to diversify Level 2 decision making at little cost. Diversification protects against poor asset allocation, poor hiring and firing, poor timing and ineffective rebalancing. Finally, it removes soft conflicts that may prevent the most objective and correct decision from being made. These all combine to make a more robust and reliable investment process.

The second approach to diversify Level 2 decisions is to use multiple balanced managers. Although this idea may seem passé or simplistic, this approach contains powerful and dynamic properties that adds real time Level 2 diversification to the investment process.

The vast majority of institutional investment plans follow the structure shown below.

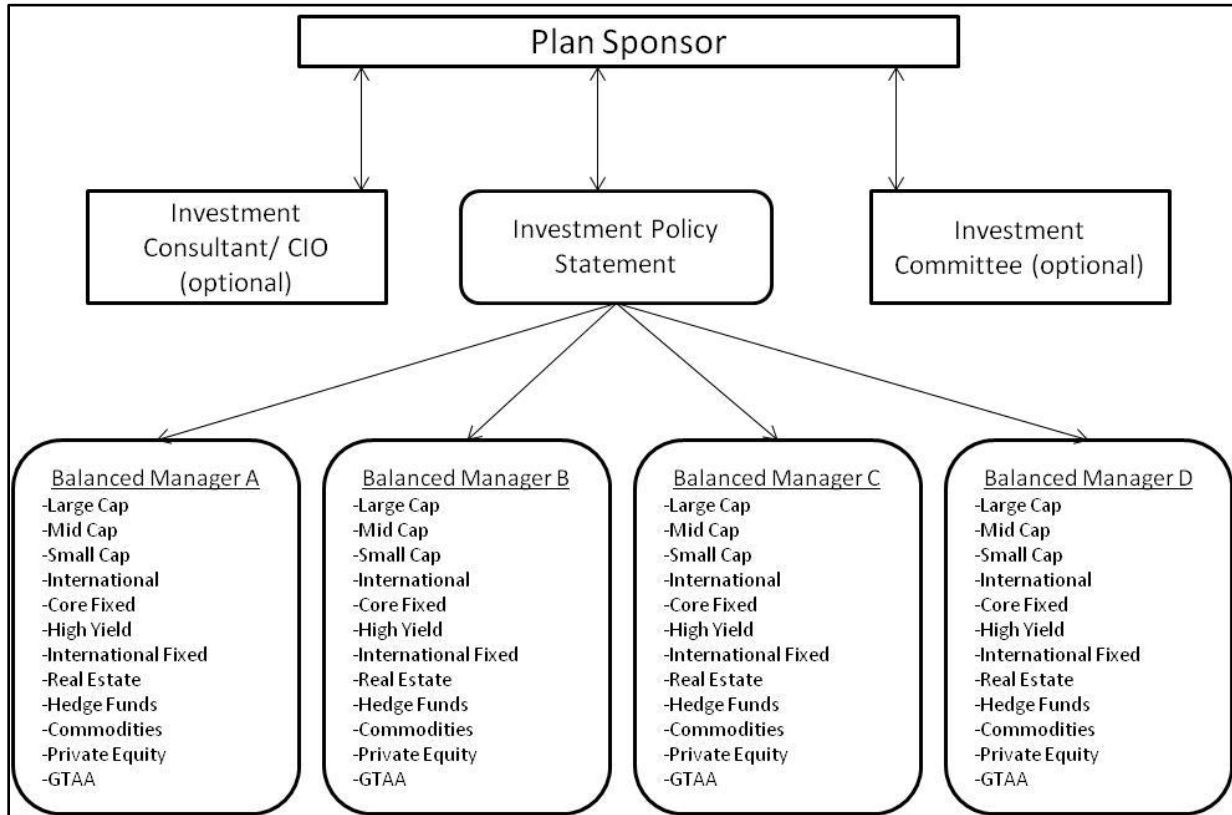


This approach puts the Investment Consultant or Chief Investment Officer squarely at the center of the investment process. *All Level 2 decisions go through this person in accordance with the Investment Policy Statement.* An Investment Committee may also be part of the process to be a more responsive representative of the Plan Sponsor. The Investment Consultant or Chief Investment Officer may or may not have discretionary authority. For purposes of Level 2 diversification, it makes no difference.

The problem with this widely diversified, multi-manager approach is that it completely lacks Level 2 diversification. Not only do all Level 2 decisions originate from a single source, but it also lacks timeliness of execution (even if there is discretionary authority.) Assuming separately managed

portfolios, the implementation of asset allocation, manager hiring/firing, and rebalancing are all delayed and take place at a snail's pace, with the possibility of being out of the market during execution.

A multiple balanced managers investment strategy is radically simple. Basically, the structure is to have several balanced managers following the same Investment Policy Statement. The Investment Policy Statement is written like most others, except it gives discretion to each balanced manager with regards to asset allocation, management (active and/or passive), and rebalancing. It looks like the chart below.



Each balanced manager has Level 2 discretion to allocate assets, hire/fire sub-managers and rebalance the portfolio in real time.

Besides Level 2 diversification in real time, there are other benefits that can be observed. You will notice that all asset classes in the traditional model are employed in the multiple balanced managers model. This brings further diversification to each asset class. There are additional advantages we can briefly acknowledge.

A plan sponsor could have one of the balanced managers be strictly a passive manager. This will provide manager diversification in that not all will be active and will reduce costs. Further, this could isolate a manager's ability to allocate assets and rebalance.

Performance monitoring would be much easier. Instead of having reports from various specialty managers and a summary from the performance monitor, a few reports from the balanced managers will be easier to comprehend and compare, allowing a sponsor to better perform their fiduciary duty to monitor.



Finally, costs to implement a multiple balanced managers strategy should be much less than a multi-manager strategy using specialty managers. Management fees are normally on a sliding scale such that the average cost goes down with volume. By dividing assets among various specialty managers, the costs should be higher than a few balanced managers. Further, the need for an Investment Consultant or Chief Investment Officer virtually disappears, creating further cost reductions.

Diversification is one of the most fundamental precepts in investment management. Level 2 diversification is the “missing level” that can protect investors from mistakes concerning the most critical decisions in the investment process. Unfortunately, too many investors do not have Level 2 diversification and it may be *costing them greatly without even knowing it*.

By adding Level 2 diversification to an investment process, a plan sponsor can eliminate soft conflicts, diversify strategy and execution, reduce risk, and add real time decision-making. This combination will create a more robust and reliable investment process to improve long-term performance.